

Childhood Obesity: What can pediatric offices really do if the problem is environmental?

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Thanks to Ken Resnicow and Bonnie Spear

Perceived Barriers in the Treatment of Overweight Children and Adolescents

Percentage Responding "Most of the Time" and "Often"

Barrier	RDs (n= 441)	PNPs (n = 293)	Pediatricians (n = 201)
Lack of patient motivation	61.9	78.2	85.7
Lack of parent involvement	71.8	82.5	81.2
Lack of clinician time	31.2	45.9	58.0
Lack of reimbursement	68.1	46.8	45.8
Lack of clinician knowledge	23.8	32.2	44.0
Lack of treatment skills	27.3	32.2	45.0
Lack of support services	55.5	57.0	60.0
Treatment futility	37.4	52.6	53.0
Eating disorder concerns	17.2	12.9	10.0

Story MT, Neumark-Sztainer DR, Sherwood NE, Holt K, Sofka D, Trovstvedt FL, et al. Management of child and adolescent obesity: attitudes, barriers, skills, and training needs among health care professionals. *Pediatrics*. 2002;110(1 Pt 2):210-4.

Pediatricians feel overwhelming sense of futility

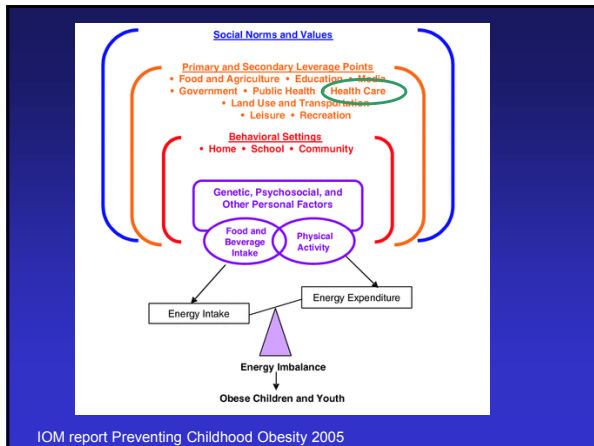
"Giving them handouts just placates me"

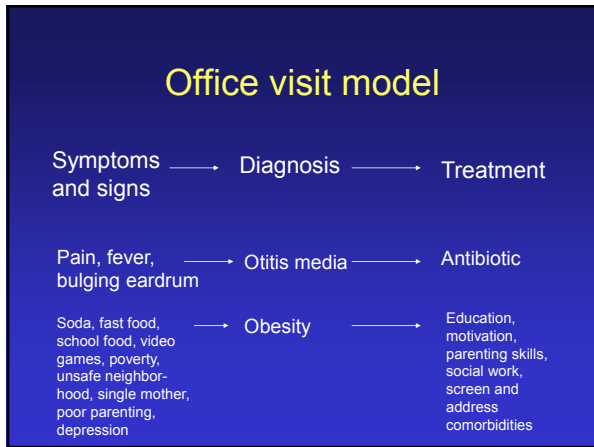
"I just feel kind of powerless...what more can I do?"

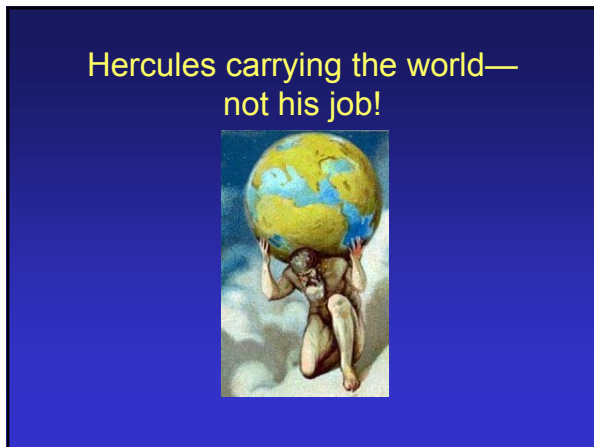
"It's so much bigger than everybody and all our patients"

"I can talk until I'm blue in the face...you know at home these kids are just following the [overweight] parents' footsteps, and there's not really anything that's going to change that"

Barlow SE et al. *Child: Care, Health & Develop.* 2007;416







Expert Committee Recommendations

<u>Sponsors</u>	<u>Committee</u>	<u>Writing Groups</u>
American Medical Association	AACAP, AAFP	1. Prevention
Centers for Disease Control	AAP, ACPM, ACSM	2. Assessment
Maternal and Child Health Bureau	ADA, APSA, APA	3. Treatment
	AAIP, Endocrine Soc	
	NAPNP, NASN,	
	NHMA, NMA	
	NAASO	

Reports: *Pediatrics* supplement December 2007

Assessment of Child and Adolescent Overweight and Obesity. Krebs NF, Himes JH, Jacobson D, Nicklas TA, Guilday P, Styne D. *Pediatrics* 2007;120;S193-S228

Recommendations for Prevention of Childhood Obesity. Davis MM, Gance-Cleveland B, Hassink S, Johnson R, Paradis G, Resnicow K. *Pediatrics* 2007;120;S229-S253

Recommendations for Treatment of Child and Adolescent Overweight and Obesity. Spear BA, Barlow SE, Ervin C, Ludwig DS, Saelens BE, Schetzina KE, Taveras EM. *Pediatrics* 2007;120;S254-S288

Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report. Barlow SE and the Expert Committee. *Pediatrics* 2007;120;S164-S192

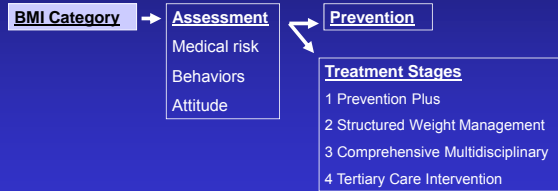
Evidence limitations

Evidence is often limited

- studies target specific diet or physical activity behaviors
- studies identify association rather than intervention
- few studies examine delivery of care

Recommendations summarize and give broad assessment of the *best available* evidence

Universal Assessment of Obesity Risk



Measurement of obesity

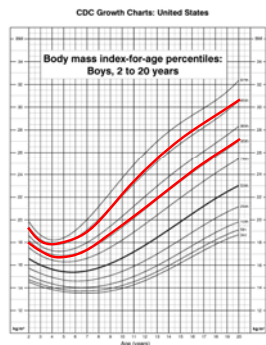
Body mass index
 $\text{weight} \div \text{height}^2$

Validity in children

- Correlates with adiposity (correlation .82-.88) ¹
- Correlates with adult adiposity ²
- Correlates with cardiovascular risk factors³, and long-term mortality⁴

1. Field AE et al *Obes Res* 2003 11:1345
 2. Freedman DS et al *Pediatrics* 2005; 115: 22
 3. Freedman DS et al *J Pediatr* 2007;150:12
 4. Must A et al *Int J Obes* 1999;

Center for Disease Control Growth Charts: United States

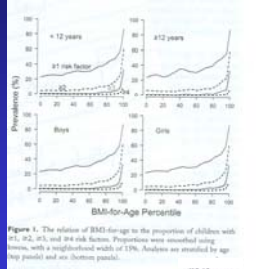


Two cut-points:
 Obese: $\geq 95^{\text{th}}$ percentile
 Overweight: 85^{th} – 94^{th} percentile

www.cdc.gov/growthcharts

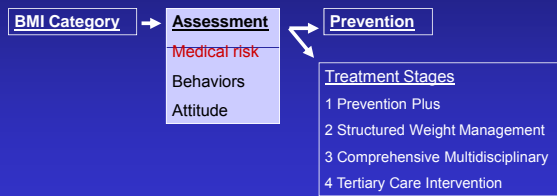
99th percentile BMI

Age (years)	Boys (kg/m ²)	Girls (kg/m ²)
5	20.1	21.5
8	25.6	26.4
11	30.7	31.5
14	33.2	36.0
17	34.4	40.8

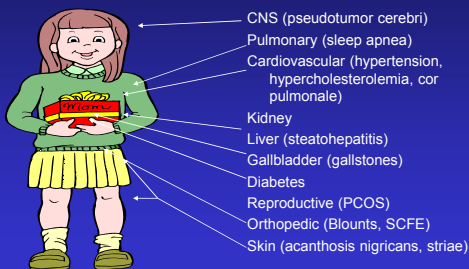


Freedman DS et al *J Pediatr* 2007;150:12-17, e2

Universal Assessment of Obesity Risk



Affected Organ Systems



Recommended laboratory evaluation

BMI category		Laboratory
85 th -94 th %ile,	No risk factors*	Fasting lipid profile
	Risk factors*	Fasting lipid profile Fasting glucose (q 2 yr, age 10+) ALT and AST (q 2 yr, age 10+)
≥ 95 th %ile		Fasting lipid profile Fasting glucose (q 2 yr, age 10+) ALT and AST (q 2 yr, age 10+)

* examples: hypertension, tobacco use, family history of co-morbidities

Medical assessment: next steps

The assessment paper describes

- Further diagnostic testing
- Recommended initial therapy
- Subspecialty involvement

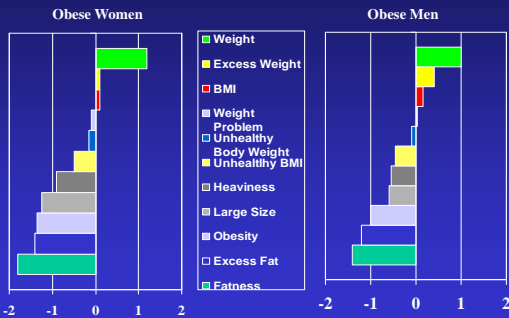
Attitude

Ask parents and patients open-ended questions about weight.

Choose language carefully to maintain alliance

- "Do you have any concerns about your weight?"
- "What do you think about your child's weight?"
- "We know that extra weight gain can be connected with this problem. Is it OK if we talk about your weight?"

Adult Patients' Preferred Terms



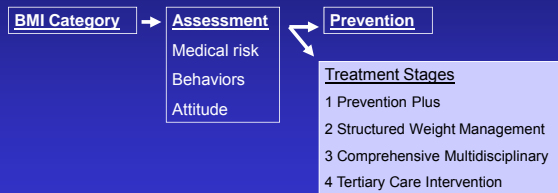
Wadden TA, Didie E. *Obes Res* 2003;11:1140

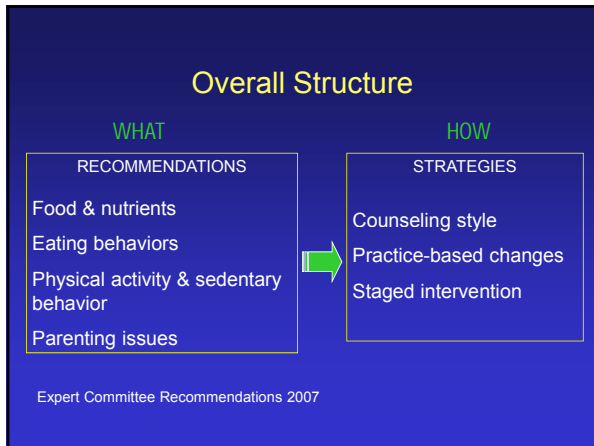
Stages of change:

“What do you think about your child’s weight?”

Pre-contemplation	“She’s a healthy girl. She’s big but we are all big. Her weight is fine.”
Contemplation	“Well, she is bigger than most girls her age, and she has gained a lot of weight this year, but I think maybe she’ll outgrow it.”
Preparation	“I think she is too big. I know she eats too much junk food, and when we move out of my parents’ house, I will stop buying soda.”
Change	“She’s gained too much weight, but I enrolled her in soccer and switched from soda to tea.”
Maintenance	“She is doing much better since I stopped fast food last winter, but she will be spending the summer with her father.”

Universal Assessment of Obesity Risk





Patient Level Recommendations

Dietary Intake:

1. Limit sugar-sweetened beverages.
2. Encourage recommended quantities of fruits and vegetables.

Physical Activity:

1. Limit television and other screen time for children:
 - a. ≤ 2 hours of screen time per day.
 - b. Remove televisions from sleeping areas.

Eating Behaviors:

1. Eat breakfast daily.
2. Limit eating at restaurants, particularly fast food restaurants.
3. Encourage family meals
4. Limit portion size.

Patient Level Suggestions

Dietary Intake:

1. Eat calcium-rich diet.
2. Eat high-fiber diet.
3. Eat a diet with balanced macronutrients (per Dietary Reference).
4. Encourage breastfeeding.

Physical Activity:

1. At least 60 minutes of moderate to vigorous physical activity daily
 - a. Can take place over several shorter periods.
 - b. Activity should be enjoyable to the child.

Eating Behaviors:

1. Limit energy-dense foods.

How to interact with families: Motivational interviewing is one model

Positive	You are doing well with sugared drinks <i>I know they're not healthy. He used to drink a lot of soda, but now I try to give him water. I think we are down to just a few sodas a week.</i>
Reflect	So you have been able to make a change without too much stress
Elicit	Your child watches 4 hours of TV on school days. What do you think about that? <i>I know it's a lot but he gets bored otherwise and starts picking on his little sister.</i>
Reflect	So watching TV keeps the house calm.
Query	We've talked about fast food restaurants and television viewing. Which of these, if either of them, do you think you and your child could change? <i>Well, I think fast food is somewhere we could do better. I don't know what he would do if he couldn't watch TV. Maybe we could cut back on fast food to once a week.</i>
Agree	That sounds like a good plan.

1. Inform 2. Elicit 3. Advise

Traditional

"A box of macaroni and cheese has 4 servings in it, and your child is eating the whole box for a snack. That has got to stop."



Patient-centered

"If you look at the label on the macaroni and cheese box, it says there are 4 servings in the box.

What do you make of this information?"

"Wow, I had no idea."

"Let's talk about better choices for snacks..."

Structuring a practice: Chronic Care Model

Environment

Family
School
Worksite
Community

Family/Patient
Self-Management

Medical System

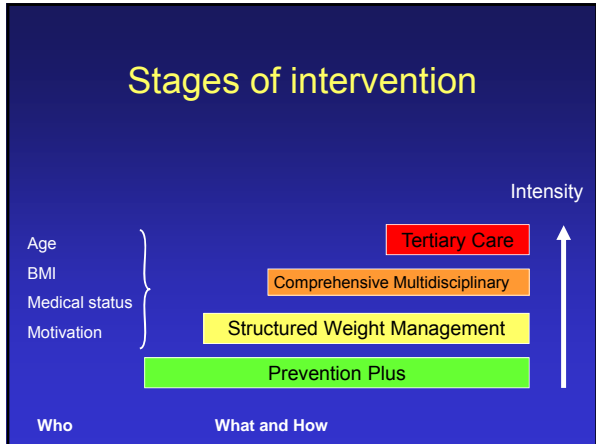
Information Systems
Decision Support
Delivery System Design
Self Management Support

Staff development

Group Visits

Case management

Quality improvement practices



1. Prevention Plus

WHAT	HOW
5+ fruits and vegetables	Office-based
≤ 2 hours screen time	Trained office support
≥ 1+ hours physical activity	MD, PNP, PA, RN
Reduce sweet drinks	Scheduled follow-up visits
Eating behaviors (3 meals, family meals, etc.)	Advance to next level depending on response and interest
Family-based change	

Maine Collaborative

Primary Care Offices

- Targeted >85th % tile
- MD trained in interviewing
- Tickler system for charts to begin process
- Message
 - 5 fruits and vegetables
 - 2 hours or less of TV per day
 - 1 hour or more physical activity
 - 0 servings of sweetened beverages

3. Comprehensive Multidisciplinary Intervention

WHAT

- Same as level 2 but with
- More frequent contact
 - More structured monitoring, goal setting, feedback

HOW

Dedicated weight management program
or
RD and behavioral counselor + structured activity program
Weekly for 8-12 weeks, then monthly

Studies of weight loss in children 6 to 12 years old 20 – 100% above ideal body weight

6 month program of behavior modification to improve diet and activity

10 year follow-up

34% had at least a 20% weight decrease

30% were not obese (<120% ideal weight)

Epstein Health Psychology 1994

Bright Bodies: 12 month program for 8 to 16 year olds

- 209 ethnically diverse and low income
- Mean BMI 35 kg/m²
- Semiweekly for 6 months, then semimonthly for 6 months
- Nutrition education, motivational interviewing, behavior modification, physical activity

Intervention: BMI change = - 1.6 kg/m²

Control: BMI change = +1.7 kg/m²

Savoie M et al. JAMA 2007;297:2697

4. Tertiary Care

WHAT

Consider

- Medication
- Surgery
- Meal replacement
- Supplement ongoing behavior change work

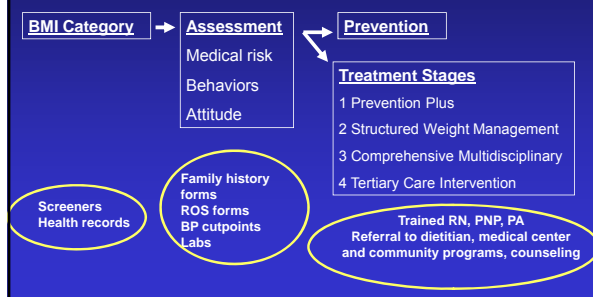
HOW

Pediatric weight management center
Multidisciplinary team
Clinical or research protocols

What can pediatric offices really do if the problem is environmental?

- Prevention Plus
- Structured Weight Management
- Comprehensive Multidisciplinary Intervention
- Tertiary Care

Strategies for pediatric office involvement



The four stages of primary care office intervention

Deliver key healthy lifestyle messages

Verbally, handouts, posters

Actively identify high risk patients. Provide brief counseling

Office staff to work together. Use medical record

Line up your resources

Community programs, dietitians, therapists

Culturally appropriate handouts

Use behavior change techniques!

Improved environment, goal-setting, self-monitoring

Improved environment

Kids live in “obesogenic” environment

No time in the office visit.
Parents aren’t interested

- Keep junk food out of the house
- Remove TVs from bedrooms
- Be sure active toys, like bikes, are available and working
- Posters and community information
- Health record—flags and prompts
- Staff training
- Tailored handouts

Goal setting:

Specific, measurable, achievable

“Eat better and exercise more so I lose 20 lbs”

“Urge overweight patients to eat right and exercise more to lose weight”

- Reduce regular soda to once a week
- 30 minutes play after school 4 days a week
- No bread with dinner
- Check local Y program
- BMI calculation
- Talk about TV at 18 month well child visit
- Devote 8 hours selecting tools from toolkits
- Devote 8 hours identifying local resources

Self-monitoring

"The kids are outdoors sometimes, when the weather is good"

- Keep a calendar
- Address problems or revise goals
- Praise success and set new goals

"I think some of us are talking about TV at 18 month visits"

- Review charts
- Address problems (involve all office staff) or revise goals
- If successful, set new goals

National Initiative for Children's Healthcare Quality (NICHQ) Childhood Obesity Action Network

Mission is improvement in clinical care

- Dissemination of evidence-based strategies
- Advocacy
- Dissemination of clinical tools

Implementation guide is available on website www.nichq.org

Obesity care is a team activity

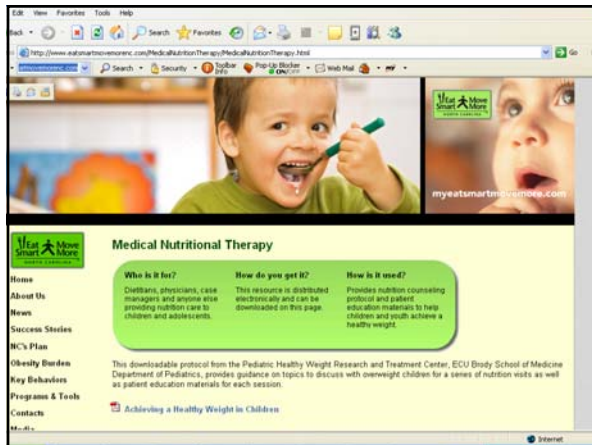


Putting Childhood Obesity Guidelines Into Practice

- Standardized Medical Nutrition Therapy (MNT) in Primary Care Settings
 - Kathryn M. Kolasa PhD, RD, LDN
Associate Director, Pediatric Healthy Weight Research and Treatment Center at East Carolina University, Greenville, NC

And David Collier MD, PhD, Sarah Henes MA, RD, Cara Jenkins MPH, RD Susan Morrissey MA, Doyle Cummings PharmD





Objective

- Share the natural history of developing the KIDPOWER MNT protocol and its implementation in primary care offices
- Describe components and efficacy of KIDPOWER protocol
- Highlight new opportunities to identify best practices



MNT for Overweight Kids

When we started in 2002...

- ~40% our community youth >85thtile BMI for age; ~30% at risk for hyperinsulinemia
- Retrospective chart review documented evidence of children in our community that were identified as overweight but not receiving MNT
- Limited evidence of effective treatments for pediatric obesity
 - Summerbell et al Cochrane Systematic Review, May 2003
- Guidance for pediatrician but no published protocols for MNT
 - Barlow and Dietz, Peds;1998;102.
- No tradition or reimbursement for MNT for overwt kids, especially in primary care office



In 2002

- Ensure equitable access to prevention and treatment services to reduce health disparities
- Need evidence for “what works”
- Need tool kits/protocols to guide screening and treatment
- Need obesity defined as a disease to secure third party coverage for prevention and treatment services for youth
- Need professionals to be reimbursed for treatment services to overweight youth
 - Adapted from “Moving Our Children Toward Healthy Weight” www.eatsmartmovemorenc.com



In 2009, reimbursement expanding

- Some states Medicaid
- Obesity Prevention Initiative (Aetna Inc, BCBS NC, NCBS MA, Wellpoint Inc, and growing number of self insured employers)
 - 4 visits w/primary care MD
 - 4 visits w/RD
 - Ages 3-18 y; >85thtile for age



MNT Protocol Goals

- Metabolic outcomes
 - clinical lab measurements (total cholesterol, LDL, HDL, triglyceride, serum insulin, glucose, BP)
 - labs measured at baseline and after 3 mos MNT
- Lifestyle, nutrient, and energy modification
- Improvement of health via healthy food choices
- Meeting nutrient requirements while addressing needs of individual
- 7 MNT sessions in 6 months
 - (1) 60 minute initial
 - (6) 30-45 min follow up sessions, 2-4 weeks apart

Success 1

- Local group able to collaborate
- Produced protocol all were willing to use
- Raised local funds to support RD implementing the protocol in pediatric and family medicine practices
- RD welcomed into all identified practices

Did we guess right that 7 visits are needed?

- Subjective experience after first 582 kids
- Objective analysis: retrospective chart review of 129 patients referred to RD for weight management and seen in referring MD's practice
 - Data documented on Electronic Medical Record template or paper chart
 - No charge for service as RD services covered by hospital grant; no additional incentives for participation

Goals after 1st MNT visit

- Increase dairy to 3 servings with low fat dairy, including low fat milk at school
- Incorporate veggies with school lunch, and with after school snack
- Mom to help Brandon choose Winner's Circle items at school/and when out to eat

Daily Servings

Protein: 5-7 servings
 1 serving =
 1.5 oz of cooked meat, poultry, or fish
 1 egg
 1 oz of nuts/seeds
 1/2 cup of beans
 1 oz of low-fat cheese

Other Foods are not needed for healthy diet, but add enjoyment to eating. These are not recommended serving sizes or number of servings to eat.

Drinks and Beverages are to be used with moderation. Remember that all drinks have empty calories.

Join the Winner's Circle
 Look for the purple star and fork in your school cafeteria and vending machines. Choose foods and drinks that are marked with the Winner's Circle logo.

Lunch Packing Tips:

- Use a variety of breads in sandwiches - bagels, rolls, pizza pockets, English muffins, rye or multigrain breads.
- Take a pasta salad made with fun-shaped and colored pasta - small shells, wagon wheels or cornicorns.
- Use lean meats in sandwiches and salads - turkey breast, chicken breast, ham or roast beef.
- Choose milk that is 2%, 1% or fat-free.
- Don't forget the fruit - take fresh fruit or fruit cups packed in light syrup or juice.
- Find ways to add veggies to meals - put them in sandwiches, pasta salads or soups.

Baked, Not Fried
 Did you know that the tasty French fries and yummy chicken nuggets that you get in your school cafeteria are not fried? They taste just as good baked, and are healthier for you!

<http://www.ecu.edu/cs-dhs/pedsweightcenter/mntProtocol.cfm>

Pediatric Weight Management Medical Nutrition Therapy Protocol

<p>Before Initial Session</p> <p>↓</p> <p>After nutrition referral</p>	<p>Obtain Referral Data (if possible): Height, weight, BMI, growth chart classification (%ile) Labs - fasting blood glucose, insulin, lipid profile Blood pressure, C-peptide (optional) Personal and family medical history Medications Exercise tolerance/medical clearance Physical activity participation (including sedentary time)</p>
<p>Initial Session 60 minutes</p>	<p>Assessment: height, weight, BMI, growth chart classification (%ile), blood pressure, lifestyle/psychosocial/nutrition history, readiness to change, physical activity pattern.</p> <p>Intervention: Self-management training: nutrition prescription, Review appropriate food guide, portion sizes, meal planning (including age-appropriate portion sizes and fluids), physical activity goals (if necessary), potential food/drug interaction. Mutually set goals. Food records to be kept.</p> <p>Handouts: "Straight Food guide," "One Physical Activity log," "What Does a Portion Size Look Like?," "Fruits & Veggies, Think Before You Drink"</p> <p>Communication: Summary to PCP.</p>
<p>First Follow-up Session 30-45 minutes</p>	<p>Assessment: height, weight, BMI, growth chart classification (%ile), blood pressure, dietary intake from records, adherence and compliance, physical activity pattern, lifestyle changes, change in medication.</p> <p>Intervention: (as appropriate for client's needs/interest): Self-management training; reading food labels; grocery shopping; fast food/outing out; skills to meet goals.</p> <p>Handouts: "How to Read a Nutrition Facts Label," "Healthy Eating on the Go," "Dining Out-How to Choose"</p> <p>Communication: summary to PCP.</p>

2nd MNT Visit

- Ht 51.75 in, wt 90#, BMI 23.6 (still above 95th % tile for age, but slowly decreasing)
- Changes made: Increased 1) low fat dairy to 2/day; 2) fruit to 1-2/d; 3) veggies to 1/day; 4) activity
- Goals: 1) continue to help Brandon make healthy food choices away from home; 2) agreed to try new veggie; 3) continue to increase calcium intake

Pediatric Weight Management Medical Nutrition Therapy Protocol cont'd

Second Follow-up Session 30-45 minutes	<p>Assessment: Ht, wt, BMI (%tile), BP, review labs, intake from food records, adherence & comprehension, physical activity pattern, lifestyle & mood changes</p> <p>Intervention: (as appropriate for client's needs/interest) Self-management training: review fast food/dining out, introduce recipe modifications, skills to meet goals. Modify medical nutrition therapy as needed.</p> <p>Handouts: Ideas for Helping Your Child Try New Foods, Food Preparation- What to do, Low-Carb, Lower Fat Alternatives</p> <p>Communication: Send summary to PCP.</p>
Third Follow-up Session 30-45 minutes	<p>Assessment: height, weight, waist circumference, BMI, growth chart classification (%tile), blood pressure, lifestyle/psychosocial/nutrition history, physical activity pattern</p> <p>Intervention: (as appropriate for client's needs/interest): Self-management training: Discuss lunch at school (back lunch ideas & healthy school lunch options), mutually set goals. Food records to be kept.</p> <p>Handouts: * Eat Smart Lunches</p> <p>Communication to PCP: Request labs (if feasible) and send summary to PCP.</p>
Fourth Follow-up Session 30-45 minutes	<p>Assessment: height, weight, BMI, growth chart classification (%tile), blood pressure, lifestyle/psychosocial/nutrition history, physical activity pattern</p> <p>Intervention: (as appropriate for client's needs/interest): Self-management training: Discuss snacks (vending choices and snacks at home), mutually set goals. Food records to be kept.</p> <p>Handouts: * Snack Attack (age-appropriate version)</p> <p>Communication: Summary to PCP.</p>

3rd MNT visit

- Ht: 52in, wt : 89#; BMI 23.5 (>95th)
- Changes made:
 - Brandon tried new veggie, didn't like it, but found something he liked and increased to 2 servings/day
 - Meeting calcium needs: 3-4 servings/d
- Goals:
 - Label reading exercise: mom to compare "healthy" granola bars, Brandon asked to compare favorite sugar cereal to lower sugar cereal

Reading Food Labels

It is important for you to know about the foods and beverages you eat and drink. The Nutrition Facts on the food label of most foods and beverages can help you figure out which foods are the healthier choices. The Nutrition Facts panel has a lot of important information, but for this activity, we are going to focus on three parts of the label: serving size, calories, carbohydrate and grams of fat.

1. Go to a grocery store or convenience store and choose two similar foods, one of which says low-fat or low-fat, the other one regular. For example: low-fat salad dressing and regular salad dressing, low-fat cookies and regular cookies, baked corn chips and regular corn chips. Pick foods that you usually eat, and then complete the chart below:

	Low-fat Version	Regular Version
What is the serving size?		
To fill the amount that you usually eat or drink?		
How many calories are in a serving?		
How many grams of fat are in a serving?		
How many grams of carbohydrate are in a serving?		

2. Which of the two foods is lower in fat?

3. Which of the two foods is lower in carbohydrate?

4. Did you notice any other differences between the two labels?


 Pitt County Public Health and Nutrition Educators 07.08
 

<http://www.ecu.edu/cs-dhs/pedsweightcenter/mntProtocol.cfm>

4th MNT Visit

- After 3 months of MNT:
- BMI 23.3 (>95th % tile)
- Labs: Total cholesterol 163 (29 pt ↓)
 - LDL 109 (26 pt ↓)
 - HDL 45 (1 pt ↑)
 - TG 46 (40 pt ↓)
 - Glucose 80 (4 pt ↓)

Pediatric Weight Management Medical Nutrition Therapy Protocol cont'd	
Fifth Follow-up Session 30-45 minutes	Assessment: height, weight, BMI, growth chart classification (%tile), blood pressure, dietary intake from records, adherence and comprehension, physical activity pattern, lifestyle changes, change in medication. Intervention: (as appropriate for client's needs/interest): Self-management training; Discuss physical activity (reducing sedentary time). Mutually set specific skills to meet activity goals. Handouts: *Physical Activity Pyramid/Physical activity pyramid/Communication to PCP; Request labs (if feasible) and send summary to PCP
Sixth Follow-up Session 30-45 minutes	Assessment: height, weight, waist circumference, BMI, growth chart classification (%tile), blood pressure, review labs, discuss nutrient analysis of food records, adherence and comprehension, physical activity, lifestyle changes, change in medication. Intervention: (as appropriate for client's needs/interest): Self-management training; Discuss setting goals and healthy incentives (vs. food as reward). Modify medical nutrition therapy as needed. Handouts: *Parents and Guardians as Role Models Communication: Summary to PCP (including long-term goals and plans for ongoing care).
Ongoing Follow-up Sessions Minimum contact of once every 12 weeks	

5th MNT Visit

- After 5 months of Medical Nutrition Therapy:
 - BMI: 23.2 (> 95th % tile for age); decreased from BMI of 24.4
- Family feedback: Dad says he's happy with changes family is making, and is impressed with Brandon for making healthier food choices when going out to eat (especially fast food- ordering baked potato vs. fries, and diet soda or water instead of sweet tea.)
- Brandon is now reads labels on a regular basis when going shopping with Mom
- What more does Brandon need?

Challenges

- With Teens (12-20 yrs old):
 - Follow up after 3 sessions: "fall off wagon" or overconfidence in ability
 - If not meeting all goals, may have feelings of guilt, and may not reach out
 - "All or none" mentality
- With Youth (2- 12 yrs old):
 - Parents' readiness to change
 - Long Term Maintenance

Subjective challenges about referring to RD met

- ✓ Doctors not aware of services or programs
- ✓ Doctors may not believe counseling will work
- ✓ Doctors don't like sending patients to another practice for services (e.g. Brody School of Medicine)
- ✓ Doctors are reluctant to refer patients for services that are not covered by insurance. Some don't even give the patient a choice.
 - For conditions like diabetes insurance usually pays for nutrition consult
 - For other conditions insurance may pay
 - Until recently no insurance paid for weight management



Subjective challenges for patient to act on referral to RD being worked on

- ✓ Patients may not want to go
 - Don't like to take kids out of school, and limited appts out of school times
 - May "believe" the kid will grow into his/her weight
 - Don't want to change way family is eating/exercising
 - Don't believe it's important if insurance doesn't cover it



Objective Assessment Retrospective Chart Review

- Document impact of nutrition education utilizing the PHWRTC 7 visit protocol as used in usual care
- If possible, answer questions
 - If a child receives Medical Nutrition Therapy (MNT), how many visits does it take to meet goals set in protocol?
 - What changes can be expected from these visits?
 - weight/BMI score
 - Clinical variables: TC,LDL, HDL, TG, serum insulin, glucose
 - Change in nutrition behaviors:
 - Intake of sweetened beverages/sodas; fruits/vegetables
 - frequency of dining out and physical activity
 - television budget

Sample Characteristics (n=129)

	Total	Initial age in categories					
		2-5 yrs		6-11 yrs		12-20 yr	
		n	%	n	%	n	%
Race							
Caucasian	50	3	6	28	56	19	38
African Am.	67	6	9	21	31	40	60
Hispanic	6	2	33	3	50	1	17
*Undoc.	6	---	---	6	100	---	---
Gender							
Female	90	7	8	40	44	43	48
Male	39	4	10	18	46	17	44

Sample Characteristics

Baseline Lab Measure	N	Mean Value (\pm SE)	Standard
Total Cholesterol (mg/dl)	89	168.08 (\pm 3.78)	< 170
Triglyceride (mg/dl)	86	91.05 (\pm 4.74)	< 200
LDL - C (mg/dl)	86	102.38 (\pm 3.64)	< 100
HDL - C (mg/dl)	85	48.33 (\pm 1.12)	> 35
Blood Glucose (mg/dL)	76	84.78 (\pm 1.54)	< 100
Systolic BP (mmHg)	39	109.03 (\pm 2.32)	
Diastolic BP (mmHg)	39	67.97 (\pm 1.44)	

Average Time between MNT Visits

MNT Visit	Suggested Protocol (months)	Average Time for f/u(months)
1	-----	-----
2	2	1.36 (\pm .19)
3	3	3.31 (\pm .39)
4	4	4.98 (\pm .56)
5	5	7.83 (\pm 1.12)
6	6	8.14 (\pm 1.22)

Changes reported at 3rd MNT visit

BEHAVIOR	MNT visit 1	MNT visit 3	p value
Eating out/wk	2.13 \pm .23	1.66 \pm .164	.04
Vegetable serving/da	.62 \pm .06	.91 \pm .08	.001
Fruit servings/da	.55 \pm .08	.86 \pm .08	.04
TV hr/week da	3.11 \pm .2	2.56 \pm .16	.007
BMI score	133.2 \pm 2.3	131.6 \pm 2.3	.008



KIDPOWER Outcomes

■ By 4th MNT Visits:

- Kids are drinking less soda: Decreased intake from >32 oz/day to < 20 oz/day
- Kids are drinking less sweetened beverages: Decreased intake from > 32 oz/day to < 20 oz/day



Insulin Resistance Status

Predicting Weight Response in Overweight Children

Doyle M. Cummings, PharmD, FCP, FCCP; Sarah Henes, MA, RD, LDN; Kathryn M. Kolasa, PhD, RD, LDN; John Olsson, MD; David Collier, MD, PhD

Conclusions: Among overweight children in primary care practices, a significant relationship was found between insulin resistance and the change in BMI z score associated with a dietitian-mediated intervention that includes a focus on decreasing sweetened beverage consumption. Estimating insulin resistance may inform dietary recommendations for overweight children.

Arch Pediatr Adolesc Med. 2006;162(9):794-798



Summary of Success

- Children w/ BMI > 95th%tile who participated in standardized protocol maintained or lowered their BMI, with significant changes occurring by the 3rd visit
- 3 nutrition visits took place over a 3 month time-frame
- By 4th visit, insulin resistant had more success if decreased sweetened beverage consumption
- MDs more willing to have fewer kids seen more often than every one seen at least once
- Increased in fruit and vegetable consumption
- Decreased in soda & sweetened beverage consumption
- Decreased in amount of times eating out each week
- Decreased in amount of TV watched each week



Outcomes

- Feasibility: Utilization/satisfaction of MNT by practice
- RD effectiveness: BMI improvement over 1 year
- Dose-response between RD visits and behavior changes
- Changes in practice attitudes and behaviors



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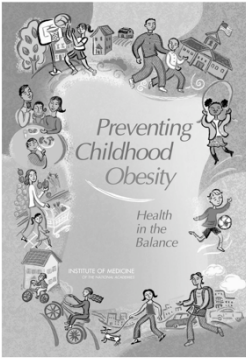
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**Preventing
Childhood Obesity:
Health In the
Balance**

Institute of Medicine

Committee on
Prevention
of Obesity in Children
and Youth



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OF SCIENCES, ENGINEERING, AND MEDICINE

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Study Background

- Congressional request for IOM study (2002)
- Sponsors: DHHS - CDC, NIH, ODPHP and RWJF
- Collaboration between FNB and HPDP Board
- Task: develop a prevention-focused action plan
- 19-member multidisciplinary committee
- 6 IOM staff
- 21 peer-reviewers through NRC
- Study duration of 24 months

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**Committee on Prevention of Obesity
in Children and Youth**

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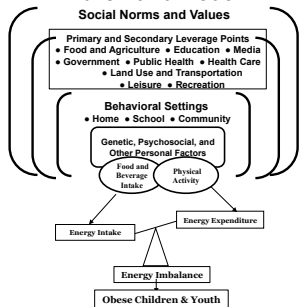
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Review of the Evidence

- The committee strongly endorsed an action plan based on the best *available* evidence instead of waiting for the best *possible* evidence
- Integrated approach to the available evidence
 - Limited obesity prevention literature upon which to base recommendations
 - Parallel evidence from other public health issues
 - Dietary and physical activity literature



Framework for Understanding Obesity in Children and Youth



Energy Balance

**Energy intake =
Energy expenditure**

For children, *maintain energy balance at a healthy weight* while protecting health, growth and development, and nutritional status



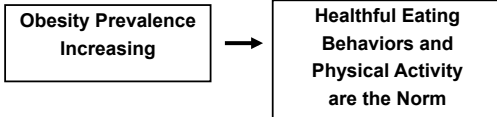
Key Conclusions

- Serious nationwide health problem requiring a population-based prevention approach
- The goal is **energy balance** – healthful eating behaviors and regular physical activity to achieve a **healthy weight** while protecting health and normal growth and development
- Societal changes at all levels are needed – multiple sectors and stakeholders



What is Needed?

- Leadership
- Evaluation
- Resources
- Efforts at all levels
- Change in societal norms



Key Stakeholders Involved

- Families
- Schools
- Communities
- Health care
- Industry
- Media
- Government





Health Care Community

- Professionals who care for children
 - Pediatricians, family physicians, nurses, etc.
- Professional organizations
 - AAP, AAFP, ANA, etc.
- Training programs and certifying entities
 - Medical schools, residencies, CME, MoC, boards
- Health plans, insurers, and accreditors
 - Kaiser, CIGNA, NCQA, etc.



Health Care Professionals

- Routinely track BMI
- Offer relevant evidence-based counseling and guidance
- Serve as role models
- Provide leadership in their communities

Professional Organizations

- Disseminate evidence-based clinical guidance
- Establish programs on obesity prevention
- Coordinate with each other to present a consistent message

Training Programs and Certifying Entities

- Include obesity prevention knowledge and skills in their curricula across the spectrum of education
 - Undergraduate, graduate, postgraduate
- Require obesity prevention knowledge and skills in their maintenance of certification examinations



Health Plans, Insurers, and Accreditors

- Provide incentives to their enrollees for maintaining healthy body weight
- Cover routine screening and counseling about body weight—diet and physical activity—as clinical preventive services
- Include these activities as benchmarks in quality assessment measures



Healthy Homes

Promote Healthful Eating and Regular Physical Activity

- Exclusive breastfeeding first 4-6 months
- Provide healthful foods - consider nutrient quality and energy density
- Encourage healthful decisions re: portion size, how often and what to eat
- Encourage and support regular physical activity
- Limit recreational screen time to < 2 hours/day
- Parents should be role models
- Discuss child's weight with health care provider



Research Priorities

- Evaluation of interventions - efficacy, effectiveness, cost-effectiveness, sustainability, scaling up
- Behavioral intervention research – factors involved in changing dietary, physical activity, and sedentary behaviors
- Community-based population-level research - high-risk populations, health disparities



“Preventing childhood obesity is a collective responsibility... The key will be to implement changes from many directions and at multiple levels.”

www.iom.edu/obesity/

